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August 1991 Agdex 114/33-38

Varietal Description of CDC Buck Hulless Six-Row Spring Barley

Origin and breeding

CDC Buck, tested as BT 492 and SB85065, is a hulless six-row feed barley developed at the Crop Development Centre, University of Saskatchewan. It was derived from the cross Tupper x SB80128 made in 1981. SB80128 was derived from BrYG3-3/Fedak line///M66-102/ / Bonanza//BT420. A modified pedigree selection system using space-planted field nurseries for the F_2 through F_4 generations with single head selection, single row field nursery for the F_5 generation was used in developing this variety. The selection criteria used were yield, maturity, straw strength, disease resistance, and acid extract viscosity. Yield tests were conducted in the F_6 through F_9 generations. Breeder seed was derived from 183 F_9 lines and was first bulked in 1989.

Varietal characteristics

Plant characteristics

Coleoptile color: green

Juvenile growth: erect

Leaves: medium green; medium length and width; glabrous green sheath and blade

Flag leaf: medium green; medium length and width; 4-5 nodes; closed collar; straight neck; 3 to 10 cm exsertion

Plant height: tall; shorter than Argyle, but taller than Brier

Heading date: early; earlier than Argyle

Tolerance to drought: good

Resistance to lodging: good

Resistance to neck breaking: good

Resistance to shattering: good

Disease reactions: CDC Buck has shown resistance to stem rust *(Puccinia graminis)* and speckled leaf blotch *(Septoria passerinii)*, an intermediate reaction to common root rot *(Helminthosporium sativum)* and to the spotted form of net blotch *(Drechslera teres)* and is susceptible to loose smut *(Ustilago nuda)*, the surface borne smut *(Ustilago hordei* and *Ustilago nigra)*, scald *(Rhynchosporium secalis)* and the net form of net blotch *(D. teres)*.

Spike characteristics

Type: six-row

Shape: tapering; long; dense; lateral kernels overlap at tip

Attitude: nodding

Lemma awns: rough; longer than spike; purplish tip

Lemma veins: green; glabrous

Glumes: more than 1/2 the length of the lemma; completely covered with short hair

Stigma hairs: many

Rachis: straight; slightly tapered segments; numerous short hairs

Spike emergence: spike emerged above flag leaf

Kernel characteristics

Type: hulless

Size: medium length and width

Aleruone color: yellow

Rachilla: medium length; long hairs; few abnormal rachillas

Basal marking: transverse crease

Protein content: intermediate

Quality: feed

Acceptable variants

One hulled kernel per 1000 kernels in Breeder, Select and Foundation seed; five hulled kernels per 1000 kernels in certified seed.

Performance and adaptation

Adapted to western Canada, CDC Buck is a hulless six-row barley with excellent yield potential, strong straw, good test weight and is similar in disease resistance to Tupper and Bonanza except that it is resistant to Septoria leaf blotch.

Copies of this and related publications may be obtained from the Print Media Branch, Alberta Agriculture, 7000 - 113 Street, Edmonton, Alberta T6H 5T6 or Alberta Agriculture's District Offices.

Maintenance of breeder seed

Crop Development Centre, University of Saskatchewan

Canadian distributor

SeCan Association

Recommended by

Prairie Registration Recommending Committee for Grain

Table 1. Yield (100's of kg/ha) of CDC Buck and check varieties, Western Co-operative Six-Race Barley Trials by soil zone*, 1987-1988

Variety	Soil Type				
	Black* (15)**	Brown* (15)	Black & Grey* (11)	Peace River* (4)	Overall (45)
Argyle	36.6	38.4	49.6	51.0	41.8
Brier	42.0	46.6	54.5	50.4	47.3
CDC Buck	35.7	37.2	46.0	46.6	39.8

*1987-88 locations: Black Soil: Brandon, Glenlea, Indian Head, Melfort, Morden, Portage La Prairie, North Battleford
Brown Soil: Saskatoon, Swift Current, Lethbridge, Watrous, Scott
Black & Grey Soil: Lacombe, Calmar, Olds 1, Olds 2, Vermilion
Peace River Soil: Beaverlodge, Ft. Vermilion

**No. of station years of data

Table 2. Agronomic characteristics of CDC Buck and check varieties, Western Co-operative Six-Row Barley Trials, 1987-1989.

Variety	Days to Head	Plant Height (cm)	Lodging (1-9)*	Days to Mature	1000 Kernel Weight (g)	Test Weight (kg/hl)	Plp Kernels (%)
Argyle	56.5	82	3.4	89.3	36.2	60.1	83
Brier	55.9	75	6.0	90.0	38.5	60.7	73
CDC Buck	55.7	79	4.6	91.0	36.2	72.3	48

*1-9; 1 = best

Table 3. Yield and agronomic characteristics of CDC Buck and check varieties, Hulless Barley Co-operative Trials, 1988-1989*

Variety	Yield (100's of kg/ha)	Days to Head	Days to Mature	Plant Height (cm)	Lodging (1-9)**	1000 Kernel Weight (g)	Combine-Run Test wt. (kg/hl)	Cleaned Test wt. (kg/hl)	Viscosity (centi-stokes)	Protein (%)	Beta-Glucan (%)
Harrington	51.2	56.3	96.1	73	3.3	42.3	65.0	65.1	11.4	13.4	–
Scout	41.1	56.3	94.5	79	3.4	38.8	71.1	75.7	24.0	14.9	5.08
Condor	41.2	57.8	97.4	72	1.9	37.4	76.5	78.7	17.9	16.0	5.69
Tupper	41.3	55.7	95.4	86	2.9	34.1	67.1	74.7	16.8	14.5	4.93
CDC Buck	45.8	54.8	97.1	84	1.9	34.9	70.1	76.2	19.8	13.9	5.41

*Locations: Beaverlodge, Brandon, Glenlea, Lethbridge, Lacombe, Olds, Goodale, Kernen, Trochu
**1-9; 1 = best

Table 4. Grain yield and agronomic characteristics of CDC Buck and check varieties, Hulless Barley/Wheat Trial, 1987*

Variety	Grain Yield (100's of kg/ha)	Days to Head	Days to Mature	Lodging (1-9)**	Plant Height (cm)	1000 Kernel Weight (g)	Test Weight (kg/hl)
Harrington	54.1	54.3	99.1	4.4	74	43.5	63.9
Scout	39.9	55.4	100.5	4.8	82	41.9	72.8
Condor	41.8	54.4	99.4	3.7	69	37.8	74.5
Tupper	45.0	54.0	97.8	3.9	86	36.6	71.2
CDC Buck	51.5	52.8	95.8	3.8	83	35.5	72.5

*Locations: Beaverlodge, Brandon, Glenlea, Lacombe, Lethbridge, Kernen, Goodale

**1-9; 1 = best

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